

IAPMO/ANSI S1001.4-2015(R2020)

**Energy Production Rating
of Solar Heating
Collectors**



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Preface

This is the first edition of IAPMO S1001.4, *Energy Production Rating of Solar Heating Collectors*.

This Standard was developed by the IAPMO S1001 Technical Subcommittee and approved by the IAPMO Solar Standards Committee in accordance with the *ANSI Essential Requirements: Due process requirements for American National Standards* and the *IAPMO Policies and Procedures for Consensus Development of American National Standards*. This Standard was approved as an American National Standard on June 17, 2015.

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IAPMO/ANSI S1001.4-2015

Energy Production Rating of Solar Heating Collectors

1 Scope

1.1

This Standard specifies the procedures used to determine the energy production rating of solar heating collectors.

Notes:

- 1) *The purpose of energy production ratings is to*
 - (a) *provide a basis for comparing the relative thermal performance of various solar collector technologies when evaluated under the same rating conditions; and*
 - (b) *help users of solar heating collectors make an informed decision regarding the choice of technology with respect to thermal performance.*
- 2) *In this Standard, "solar heating collectors" are referred to as "collectors".*

1.2

The procedures in this Standard are a set of calculations used to evaluate the daily energy production of a collector under a specific set of climatic conditions using existing test results.

1.3

The calculated energy production rating values are valid when the collectors are operating with the fluid type and flow rate used during thermal performance testing.

1.4

The procedures in this Standard are applicable to the following types of collectors:

- (a) glazed tubular collectors;
- (b) glazed flat-plate collectors; and
- (c) unglazed flat-plate collectors.

1.5

The procedures in this Standard can also be used to calculate the energy production rating for other types of collectors tested in accordance with Section 4.1, including

- (a) concentrating collectors (i.e., heat generation only);
- (b) transpired air collectors;
- (c) glazed integral collector storage (ICS);
- (d) unglazed ICS; and
- (e) thermosyphon collectors.